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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,043	05/11/2001	Dwayne Yount	40204	5072

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EXAMINER
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SOHN, SEUNG C

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/853,043

Applicant(s)

YOUNT ET AL.

Examiner

Seung C. Sohn

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-7,11-20,22-24 and 28-54 is/are pending in the application.
- 4a) Of the above claim(s) 11-17 and 28-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,18-20,22-24 and 35-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 18, 2003 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. ***Claims 1-3, 5-7, 18-20, 22-24, 40-43 and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over van den Engh et al. (Patent No. US 5,150,313) in view of Bierhoff (Patent No. US 4,813,031).***

Referring to claims 1 and 40, Engh et al. shows in Fig. 5A the following elements of Applicant's claim:

a) a detector (20a), adapted to detect light emitted from said event in said flow cytometer and to generate a signal representative of said emitted light (Col. 8, lines 4-7); and

b) a sampling device (23a, i.e., A/D converter), adapted to receive portions of said signal from said detector (20a) in time sequence (by 25, i.e., Central Timing Unit) and to generate a respective value representative of the respective magnitude of each respective portion of said signal as said respective portion of said signal is being received (Col. 8, lines 8-49).

Engh et al. does not disclose an arithmetic device, adapted to arithmetically combine a designated value with each of said values. Bierhoff discloses an arithmetic device (37, i.e., processing circuit), adapted to arithmetically combine a designated value (a bar) with each of said values (Col. 5, lines 13-15). It would have been obvious to one of ordinary skill in the art to provide an arithmetic device of Bierhoff in the device of Engh et al. for the purpose of improving the generation of the control signals (Col. 1, lines 42-43).

**Referring to claim 2**, Engh et al. discloses that said sampling device (23a) receives a number of said portions totaling substantially all of said signal, and generates said values which represent said portions of substantially all of said signal (Col. 1, lines 47-51).

**Referring to claim 3**, Engh et al. discloses that said signal is an analog signal representative of a light signal emitted from said event as detected by said detector (20a) (Col. 8, lines 4-14).

**Referring to claims 5 and 41**, Bierhoff shows in Fig. 4 that said arithmetic device (37) includes a subtractor (69 & 70) which is adapted to subtract said designated value from each of said values (Col. 6, lines 49-51).

**Referring to claims 6 and 42**, Bierhoff discloses that said designated value (a bar) is representative of an undesired signal detected by said detector (11a) (Col. 5, lines 1-8).

**Referring to claims 7 and 43**, Bierhoff discloses that said designated value (a bar) is representative of a characteristic of said detector (11a) (Col. 5, lines 9-12).

**Referring to claims 18 and 50**, Engh et al. discloses the following steps of Applicant's claim:

- a) generating a signal representative of light emitted from said event in said flow cytometer using a detector (20a) (Col. 8, lines 4-7);
- b) receiving portions of said signal from said detector (20a) in time sequence (Col. 8, lines 4-7); and
- c) generating a respective value representative of the respective magnitude of each respective portion of said signal as said respective portion of said signal is being received (Col. 8, lines 8-49).

Engh et al. does not disclose a step of arithmetically combining a designated value with each of said values. Bierhoff discloses a step of arithmetically combining a designated value (a bar) with each of said values (Col. 5, lines 13-15). It would have been obvious to one of ordinary skill in the art to provide an arithmetically combining

step of Bierhoff in the method of Engh et al. for the purpose of improving the generation of the control signals (Col. 1, lines 42-43).

**Referring to claim 19**, Engh et al. discloses that said receiving receives a number of said portions totaling substantially all of said signal (Col. 1, lines 47-51).

**Referring to claim 20**, Engh et al. discloses that said signal is an analog signal representative of a light signal emitted from said event as detected by said detector (20a) (Col. 8, lines 4-14).

**Referring to claims 22 and 51**, Bierhoff discloses that said arithmetic combining includes subtracting said designated value from each of said values (Col. 6, lines 49-51).

**Referring to claims 23 and 52**, Bierhoff discloses that said designated value (a bar) is representative of an undesired signal detected by said detector (Col. 5, lines 1-8).

**Referring to claim 24**, Bierhoff discloses that said designated value is representative of a characteristic of said detector (Col. 5, lines 9-12).

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. ***Claims 35-39, 44, 45-49 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by van den Engh et al. (Patent No US 5,150,313).***

Referring to claim 35, Engh et al. shows in Fig. 5A the following elements of Applicant's claim:

a) a first detector (20a) and a second detector (20b), each adapted to detect light emitted from event in said flow cytometer and to generate a signal representative of said emitted light (Col. 8, lines 4-7);

b) a sampling device(23a, 23b), adapted to receive portions of a first signal from said first detector in time sequence and to generate a respective value representative of the respective magnitude of each respective portion of said first signal as said respective portion of said first signal is being received, and to receive portions of a second signal from said second detector in time sequence and to generate a respective value representative of the respective magnitude of each respective portion of said second signal as said respective portion of said second signal is being received, wherein said sampling device receives said portions of said first signal at a time different from that during which said sampling device receives at least some of said portions of said second signal (Col. 8, lines 8-49); and

c) a storage device (24a, 24b), adapted to receive said values generated by said sampling device and to impose a delay on said values from at least one of said first and second signals (Col. 8, lines 4-49).

**Referring to claim 36**, Engh et al. discloses that said storage device (24a, 24b) time correlates said values generated from said first signal with said values generated from said second signal (Col. 12, lines 50-66).

**Referring to claim 37**, Engh et al. discloses that said delay corresponds to a distance between interrogation points of said respective first and second detectors (Col. 1, lines 36-68).

**Referring to claim 38**, Engh et al. discloses that said sampling device (23a) receives a number of said portions totaling substantially all of said signals, and generates said values which represent said portions of substantially all of said signals (Col. 1, lines 47-51).

**Referring to claim 39**, Engh et al. discloses that each of said signals is an analog signal representative of a light signal emitted from said event as detected by said detector (20a) (Col. 8, lines 4-14).

**Referring to claim 44**, Engh et al. discloses that a comparator (37), adapted to compare each of said values generated from said first signal with a respective one of said values generated from said second signal (Col. 9, lines 12-39).

**Referring to claim 45**, Engh et al. discloses the following steps of Applicant's claim:

a) generating a first signal and a second signal representative of light emitted from said event in said flow cytometer detected using a first detector and a second detector, respectively (Col. 8, lines 4-7);



b) receiving portions of said first signal and said second signal in time sequence, wherein said portions of said first signal are received at a time different from that during which at least some of said portions of said second signal are received;

c) generating a respective value representative of the respective magnitude of each respective portion of said first signal as said respective portion of said first signal is being received;

d) generating a respective value representative of the respective magnitude of each respective portion of said second signal as said respective portion of said second signal is being received (Col. 8, lines 8-49); and

e) storing said values generated from said first and second signals and imposing a delay on said values from at least one of said first and second signals (Col. 8, lines 4-49).

**Referring to claim 46**, Engh et al. discloses that the step of time correlating said values generated from said first signal with said values generated from said second signal (Col. 12, lines 50-66).

**Referring to claim 47**, Engh et al. discloses that said delay corresponds to a distance between interrogation points of said respective first and second detectors (Col. 1, lines 36-68).

**Referring to claim 48**, Engh et al. discloses that said receiving receives a number of said portions totaling substantially all of said signal (Col. 1, lines 47-51).

**Referring to claim 49**, Engh et al. discloses that each said signal is an analog signal representative of a light signal emitted from said event as detected by one of said detectors (20a) (Col. 8, lines 4-14).

**Referring to claim 53**, Engh et al. discloses that comparing each of said values generated from said first signal with a respective one of said values generated from said second signal (Col. 9, lines 12-39).

### ***Response to Arguments***

6. Applicant's arguments filed December 18, 2003 have been fully considered but they are not persuasive.

Applicant argues that Applicant's invention relates to a pulse-processing system for a flow cytometer in which each detector pulse from an event is converted into a sequence of digital values rather than into a single digital value that characterizes the entire pulse, whereas van den Engh et al. reference ('313) teaches the use of PSH circuit to produce a discrete analog value representing a characteristic of the entire input pulse from an event. However, the rejections of last Office Action are based on that the first (or second) signal having many pulses continuously coming from the first (or second) detector is converted to many digital signals by continuously sampling at specified times, i.e., a first portion of the first (or second) signal during first time frame generates a first digital value, a second portion of the first (or second) signal during second time frame generates a second digital value, etc. Examiner does not agree Applicant's assumption that a signal is a pulse, and considers a signal as comprised of

many pulses. Applicant's argument is based on the specification, not the claims. Although the claims are interpreted in light of the specification, limitations from the specifications are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). It should be noted that it is the claims that define the claimed invention, and it is the claims, not the specification, that are anticipated or unpatentable.

### **Conclusion**

7. All outstanding rejections of claims 1-3, 5-7, 18-24 and 35-53 in previous Office Action are sustained.

8. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seung C. Sohn whose telephone number is (571) 272-2446. The examiner can normally be reached on Monday through Friday from 8:30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**THANH X. LUU**  
**PATENT EXAMINER**